

# Aaron Gin – Publication List

8/19/2010

Total Journal Publications: 18

*Journals include: ACS Nano, Applied Physics Letters, CARBON, Nanotechnology and Journal of Applied Physics*

Total Conference Proceedings: 29

*Conferences include: MRS Spring/Fall Meetings, SPIE Photonics West, CLEO/QELS and EIPBN (Three Beams)*

## **Journal Publications (18)**

18. Nikolai G. Kalugin, Irakli Kalichava, James Fallt, Chris Del Barga, Chad Cooper, Juan G. Duque, Edward Gonzales, Stephen K. Doorn, Eric A. Shaner, **Aaron V. Gin**, The characterization of non-planar graphene nanowires with an  $\Omega$  shape cross-section, *Carbon* 48 (12) 3405-3411 (2010).
17. Vladimir V. Talanov, Christopher Del Barga, Lee Wickey, Irakli Kalichava, Edward Gonzales, Eric A. Shaner, **Aaron V. Gin** and Nikolai G. Kalugin, Few-Layer Graphene Characterization by Near-Field Scanning Microwave Microscopy, *ACS Nano* 4 (7) 3831-3838 (2010).
16. Xiaoyu Miao, Brandon Passmore, **Aaron Gin**, William Langston, Shivashankar Vangala, William Goodhue, Eric Shaner and Igal Brener, Doping tunable resonance: Toward electrically tunable mid-infrared metamaterials, *Applied Physics Letters* 96 (101111) (2010).
15. Stephen Myers, Elena Plis, Arezou Khoshakhlagh, Ha Sul Kim, Yagya Sharma, Ralph Dawson, Sanjay Krishna and **Aaron Gin**, The effect of absorber doping on electrical and optical properties of nBn based type-II InAs/GaSb strained layer superlattice infrared detectors, *Applied Physics Letters* 95(121110) (2009).
14. Michael L. Norton, B. Scott Day, Huan Cao, Manshiur Rahman, **Aaron Gin**, Arrays of Nanoarrays: Elements of Binding, *IEEE Sensors Journal* 8 (5/6) (2008).
13. F. Fuchs, D. Hoffmann, **A. Gin**, A. Hood, Y. Wei, and M. Razeghi, Negative luminescence of InAs/GaSb superlattice photodiodes, *Physica of Status Solidi (c)* 3(3) 444-447 (2006).
12. Darin Hoffman, **Aaron Gin**, Yajun Wei, Andrew Hood, Frank Fuchs and Manijeh Razeghi, Negative and Positive Luminescence in Midwavelength Infrared InAs-GaSb Superlattice Photodiodes, *IEEE Journal of Quantum Electronics* 41(12) (2005).

11. Darin Hoffman, Andrew Hood, Yajun Wei, **Aaron Gin**, Frank Fuchs and Manijeh Razeghi, Negative luminescence of long-wavelength InAs/GaSb superlattice photodiodes, *Applied Physics Letters* 87(201103) (2005).
10. **Aaron Gin**, Bijan Movaghari, Manijeh Razeghi, Gail J. Brown, Infrared detection from GaInAs/InP nanopillar arrays, *Nanotechnology* 16 1814-1820 (2005).
9. Yajun Wei, Andrew Hood, Haiping Yau, **Aaron Gin**, Manijeh Razeghi, Meimei Z. Tidrow, Vaidya Nathan, Uncooled operation of type-II InAs/GaSb superlattice photodiodes in the midwavelength infrared range, *Applied Physics Letters* 86(233106) (2005).
8. **A. Gin**, Y. Wei, A. Hood, A. Bajowala, V. Yazdanpanah, and M. Razeghi, Ammonium sulfide passivation of Type II InAs/GaSb superlattice photodiodes, *Applied Physics Letters* 84(12) 2037-2039 (2004).
7. **Aaron Gin**, Yajun Wei, Junjik Bae, Andrew Hood, Jongbum Nah, Manijeh Razeghi, Passivation of type II InAs/GaSb Superlattice Photodiodes, *Thin Solid Films* 447-448 489-492 (2004).
6. Yajun Wei, Junjik Bae, **Aaron Gin**, Andrew Hood, Manijeh Razeghi, Gail J. Brown, Meimei Tidrow, High quality type II InAs/GaSb superlattices with cutoff wavelength approximately 3.7 mm using interface engineering, *Journal of Applied Physics* 94(7) 4720-4722 (2003).
5. Manijeh Razeghi, **Aaron Gin**, Yajun Wei, Junjik Bae, and Jongbum Nah, Quantum sensing using Type II InAs/GaSb superlattice for infrared detection, *Microelectronics Journal* 34(5-8), 405-410 (2003).
4. Yajun Wei, **Aaron Gin**, Manijeh Razeghi, Gail J. Brown, Type II InAs/GaSb superlattice photovoltaic detectors with cutoff wavelength approaching 32  $\mu\text{m}$ , *Applied Physics Letters* 81(19), 3675-3677 (2002).
3. Y. Wei, **A. Gin**, M. Razeghi, G. J. Brown, Advanced InAs/GaSb superlattice photovoltaic detectors for very long wavelength infrared applications, *Applied Physics Letters* 80(18) 3262-3264 (2002).
2. **Aaron Gin**, P. Douglas Tougaw, Sara Williams, An alternative geometry for quantum-dot cellular automata, *Journal of Applied Physics* 85(12) 8281-8286 (1999).
1. **Aaron Gin**, Sara Williams, Haoyu Meng, P. Douglas Tougaw, Hierarchical design of quantum-dot cellular automata devices, *Journal of Applied Physics* 85(7) 3713-3720 (1999).

## **Conference Presentations / Proceedings (29)**

29. Geoff Brennecka, Shengxiang Ji, **Aaron Gin**, Jeff Stevens, Paul Nealey, John Ekerdt, Bi-Level Micro- and Nano-Patterning of Functional Electronic Oxides, *The 54<sup>th</sup> International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication, Anchorage, AK* (2010)
28. Xiaoyu Miao, Brandon Passmore, **Aaron Gin**, William Langston, Eric Shaner, Igal Brener, Electrically Tunable Thermal-Infrared Metamaterials, *Quantum Electronics and Laser Science Conference (QELS), San Jose, CA* (2010)
27. Shadi A. Dayeh, Ian H. Campbell, Jianyu Huang, **Aaron Gin** and S. T. Picraux, Elimination of Au Diffusion in Ge-based Core/Shell Nanowires for High Performance Photodetectors and FETs, *MRS Spring Meeting, San Francisco, CA* (2010).
26. **A. V. Gin**, S. A. Kemme, R. R. Boye, D. W. Peters, J. F. Ihlefeld, R. D. Briggs, J. R. Wendt, A. R. Ellis, L. H. Marshall, T. R. Carter, J. D. Hunker, S. Samora, High speed optical filtering using active resonant subwavelength gratings, *Proceedings of SPIE* 7604 (2010).
25. Shengxiang Jia, Geoff L. Brennecka, Bruce A. Tuttle, Paul F. Nealey, **Aaron Gin**, Jill S. Wheeler, John G. Ekerdt, Jeffrey Stevens, Controlled Nanopatterning of Ferroelectrics, *The 21<sup>st</sup> Annual Rio Grande Symposium on Advanced Materials, Albuquerque, NM* (2009).
24. David William Peters, Joel Robert Wendt, **Aaron Gin**, Jon F. Ihlefeld, Shanalyn A. Kemme, Sally Samora, Ronald D. Briggs, Tony Ray Carter, Active guided-mode resonant subwavelength gratings, *Integrated Photonics and Nanophotonics Research and Applications Conference (IPRNA), Honolulu, HI* (2009).
23. **A. V. Gin**, S. A. Kemme, R. R. Boye, D. W. Peters, J. F. Ihlefeld, R. D. Briggs, J. R. Wendt, L. H. Marshall, T. R. Carter, S. Samora, Active resonant subwavelength grating devices for high speed spectroscopic sensing, *Proceedings of SPIE* 7218 (2009).
22. John G. Ekerdt, Geoff Brennecka, **Aaron Gin**, Jeff Stevens, Jill S. Wheeler, Bruce A. Tuttle, Bi-Level Patterning for Functional Electronic Nanostructures, *33<sup>rd</sup> International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL* (2009).
21. Xiaoyu Miao, Brandon Passmore, **Aaron Gin**, Shivashankar Vangala, William Goodhue, Eric Shaner, Igal Brener, Doping-Tunable Metamaterials in the Mid-Infrared, *Frontiers in Optics (FiO)* (2009).

- 20.** R.P. Prasankumar, Z. Ku, **A. Gin**, P.C. Upadhyा, S.R.J. Brueck, A.J. Taylor, Ultrafast Optical Wide Field Microscopy, *Conference on Lasers and Electro-Optics (CLEO)* (2009).
- 19.** Rohit P. Prasankumar, Zahyun Ku, **Aaron V. Gin**, Prashanth C. Upadhyā, Steven R. Brueck, Antoinette J. Taylor, Ultrafast Optical Wide Field Microscopy, *Nonlinear Optics: Materials, Fundamentals and Applications (NLO)* (2009).
- 18.** G. L. Brennecka, J. S. Wheeler, C. M. Parish, B. A. Tuttle, **A. Gin**, J. G. Ekerdt, Electrical Ceramics: Functional at Fifty (and Fewer) Nanometers, *Materials Science & Technology, Pittsburgh, PA* (2008).
- 17.** Michael Norton, Mashiur Rahman, B. Scott Day, Chad Huffman, Huan Cao, David Neff, Heather Butts, **Aaron Gin**, Recent advances in molecular lithography, *Proceedings of the SPIE* 6769 (2007).
- 16.** Mashiur Rahman, B. Scott Day, Huan Cao, **Aaron Gin**, Michael L. Norton, Fabrication of gold dots for DNA based nano-sensors, *Proceedings of the SPIE* 6769 (2007).
- 15.** Ines Waldmueller, Weng W. Chow, **Aaron Gin**, Erik W. Young and Michael C. Wanke, Gain without Inversion: An Approach for THz Quantum Cascade Laser?, *International Semiconductor Laser Conference (ISLC), Waikoloa Beach, HI* (2006).
- 14.** M. Razeghi, Y. Wei, **A. Gin**, A. Hood, V. Yazdanpanah, M. Z. Tidrow, V. Nathan, High performance Type II InAs/GaSb superlattices for mid, long, and very long wavelength infrared focal plane arrays, *Proceedings of SPIE* 5783 86-97 (2005).
- 13.** Andrew Hood, Yajun Wei, **Aaron Gin**, Manijeh Razeghi, Meimei Z. Tidrow, Vaidya Nathan, Passivation of type II InAs/GaSb superlattice photodetectors, *Proceedings of SPIE* 5732 316-325 (2005).
- 12.** Yajun Wei, Andrew Hood, **Aaron Gin**, Vahid Yazdanpanah, Manijeh Razeghi, Meimei Tidrow, High performance LWIR type II InAs/GaSb superlattice photodetectors and infrared focal plane arrays, *Proceedings of SPIE* 5732 309-315 (2005).
- 11.** **Aaron Gin**, Yajun Wei, Andrew Hood, Darin Hoffman, Manijeh Razeghi, Gail J. Brown, GaInAs/InP nanopillar arrays for long wavelength infrared detection, *Proceedings of SPIE* 5732 350-357 (2005).
- 10.** S. Tsao, **A. V. Gin**, K. Mi, J. Szafraniec, W. Zhang, H. Lim, T. O'Sullivan, J. Jiang, M. Razeghi, G. J. Brown, M. Z. Tidrow, InGaAs/InGaP quantum dots and nanopillar structures for infrared focal plane array applications, *Proceedings of SPIE* 5563 74-87 (2004).

9. **A. Gin**, Y. Wei, A. Hood, A. Bajowala, Q. Nguyen, V. Yazdanpanah, M. Razeghi, G. J. Brown, M. Z. Tidrow, Nanopillars for bandgap-engineering in III-V optoelectronic devices, *Proceedings of SPIE* 5361 66-75 (2004).
8. M. Razeghi, Y. Wei, J. Bae, **A. Gin**, A. Hood, J. Jiang, J. Nah, Type II InAs/GaSb superlattices for high-performance photodiodes and FPAs, *Proceedings of SPIE* 5246 501-511 (2003).
7. Gail J. Brown, Shane Houston, Frank Szmulowicz, Krishnamur Mahalingam, Heather Haugan, Yajun Wei, **Aaron Gin**, Manijeh Razeghi, Type-II superlattice photodiodes: an alternative for VLWIR detection, *Proceedings of SPIE* 5074 191-198 (2003).
6. Gail J. Brown, Frank Szmulowicz, Krishnamur Mahalingam, S. Houston, Yajun Wei, **Aaron Gin**, Manijeh Razeghi, Recent advances in InAs/GaSb superlattices for very long wavelength infrared detection, *Proceedings of SPIE* 4999 457-466 (2003).
5. **A. Gin**, Y. Wei, J. Bae, A. Hood, J. Nah, M. Razeghi, Passivation of Type II InAs/GaSb Superlattice Photodiodes, *Proceedings of the International Conference on Metallurgical Coatings and Thin Films*, San Diego, CA. April 28 - May 2, 2003.
4. M. Razeghi, **A. Gin**, Y. Wei, J. Bae, and J. Nah, Quantum sensing using Type II InAs/GaSb superlattice for infrared detection, *Proceedings of the 4th International Conference on Low Dimensional Structures and Devices*, Ceará, Brazil. December 8-13, 2002.
3. Manijeh Razeghi, Yajun Wei, **Aaron Gin**, Aurelien David, Recent developments in infrared sensing using type II InAs/GaSb superlattice and quantum dots, *Proceedings of Electrochemical Society* 2002-14 88-97 (2002).
2. Manijeh Razeghi, Yajun Wei, **Aaron Gin**, Gail J. Brown, Daniel K. Johnstone, Type-II InAs/GaSb superlattices and detectors with  $\lambda_c > 18\mu\text{m}$ , *Proceedings of SPIE* 4650 111-116 (2002).
1. M. Razeghi, Y. Wei, **A. Gin**, G. J. Brown, Quantum dots of InAs/GaSb type II superlattice for infrared sensing, *Material Research Society Symposium Proceedings* 692 99-108 (2002).

## **Book Chapters (2)**

2. **A. Gin**, J.R. Wendt, Electron Beam Lithography for the Nanofabrication of Optical Devices, in *Microoptics and Nano optics Fabrication*, edited by S.A. Kemme (2009).
1. Y. Wei, **A. Gin**, and M. Razeghi, Atomic engineering in Type II InAs/GaSb for multicolor infrared camera, in *The Handbook of Semiconductor Nanostructures and Devices*, edited by A. A. Balandin and K. L. Wang (2004).

## ***Patents (1)***

1. Jin K. Kim, Malcolm S. Carroll, **Aaron Gin**, Phillip F. Marsh, Erik W. Young, Michael J. Cich, Strained-layer superlattice focal plane array having a planar structure, US Patent # 7755079, Issued 07/13/2010.

## ***Ph.D Dissertation***

1. **Aaron Vincent Gin**, Electron Beam Lithography for the Fabrication of Nanopillars in Type II InAs/GaSb Superlattices for Multicolor Infrared Focal Plane Arrays, December 2005. Northwestern University, Ph.D advisor: Manijeh Razeghi.